

**Water Quality Standards Advisory Committee
Meeting Minutes
NH Department of Environmental Services
November 23, 2009**

Members Present:

Robert Ball	NH Association of Conservation Commissions
Phil Bilodeau	NH Waterworks Association
Dan Blais	NH Home Builders Association
Jeff Deacon	USGS
Tracy LaChance	NH BIA
John Magee	NH Fish and Game
Eileen Miller	NH Association of Conservation Districts
Allan Palmer	PSNH
William Schroeder	NH Lakes Association
Ellen Weitzler	USEPA

Others Present:

Neil Cheseldine	Wright-Pierce
Michelle Daley	UNH NHWRRRC
Mike Metcalf	Underwood Engineers
Jason Smith	NH Fish and Game

DES Staff Present:

Jeff Andrews	NHDES Wastewater Engineering Bureau
Gregg Comstock	NHDES Watershed Management Bureau
Paul Currier	NHDES Watershed Management Bureau, Administrator
Ken Edwardson	NHDES Watershed Management Bureau
Bob Estabrook	NHDES Watershed Management Bureau
Lisa Fortier	NHDES Watershed Management Bureau
Wayne Ives	NHDES Watershed Management Bureau
Brandon Kernen	NHDES Drinking Water and Groundwater Bureau
Dave Neils	NHDES Watershed Management Bureau
Phil Trowbridge	NHDES Watershed Management Bureau
Ted Walsh	NHDES Watershed Management Bureau

9:30 – 9:35 Introductions/Selection of new Chairperson

Paul Currier

Introductions were made around the room. **Peter Rice** has declined the Chairmanship.

- **Jeff Deacon** nominated **Bill Schroeder** for chair and **Allan Palmer** seconded, a vote was taken and none were opposed.
- **Allan Palmer** nominated **Bob Ball** for vice chair and **Jeffrey Deacon** seconded, a vote was taken and none were opposed.

9:35 – 9:45 Approval of 09/23/2009 Meeting Minutes

New Chairperson

William Schroeder commented that the minutes were very good.

- **Tracy LaChance** motioned to accept the minutes and **Ellen Weitzler** seconded.

John Magee abstained from the vote because he didn't attend the September 23rd meeting.

The proposed rule changes as they exist now and the changes that were made subsequent to comments at the last meeting are tracked changes and are underlined in red. The next step in the process is presentation to the Water Council for their concurrence and then it will go to rulemaking. We will submit a request for a fiscal impact statement and we will schedule an agency rulemaking hearing at that time. Everyone will be notified of that when it happens.

William Schroeder – Did you present this to the Water Council at their last meeting?

Paul Currier - No, we didn't. We were waiting for the WQSAC to have the last crack at it before we presented it.

Bob Ball – One thing that stuck out was the turbidity section. I noticed that it had to cover all surface waters but in some places an increase of 10 NTUs is not a lot but in mountain streams 10 NTUs is a killer and I wonder if that should be lower, something like 5 NTUs for something that is a visible discharge.

Paul Currier – You are right, mountain streams tend to be either non-detect at the sensitivity of field measurements or in the low single numbers. 10 has been the standard for a long time. 10 NTUs is not a lot if you are disturbing things. It doesn't take a very turbid plume to get to 10 NTUs. We have talked internally about doing more work on the turbidity because one of the parameters for the nutrient standards for flowing waters that EPA wants us to look at is clarity. We currently use turbidity as our clarity measure. That is a valid comment and we would like to leave 10 NTUs, which are used in monitoring and enforcement. In actuality, clarity as it affects designated uses, whether it is recreation or aquatic life, has both an intensity and time component. We would like to leave it at 10 for now and put it on the list for future consideration for a change in standards in the future.

Bob Ball - Who would it impact if it were changed to 5?

Paul Currier – It would impact anyone who does construction that causes turbid runoff that can get into a stream. We have found over time that 10 NTUs works fairly well for enforcement.

John Magee – What about the time component? 20 NTUs for five minutes may not mean anything but what about 20 NTUs for five days?

Paul Currier – That is something that we would want to look at when we consider changing the clarity standard. There is literature that takes into account the time component of clarity as it affects aquatic life.

John Magee – Is that something that DES wants to go forward with as a temporal component?

Paul Currier – Several years ago, when the Tennessee Gas Pipeline was put through the North Country there were lots of stream and wetland crossings with virtual certainty that the methods they were using would violate 10 NTUs. We actually developed a protocol that we used with our field people and the contract inspectors that had a time component but it was never incorporated into the rules.

Ellen Weitzler – Do you have any reference data for the 10 NTUs?

Paul Currier – Not that I am aware of. 10 NTUs has always been in the standards and it hasn't changed. I don't know exactly where it came from.

DES Action Items from the 09/23/2009 WQSAC Minutes

1. **Ellen Weitzler** - If one parameter exceeds the 20% threshold, does the antidegradation process apply to all parameters? The answer is yes. The way we would propose to implement the procedure is the significance applies in general. You use parameter by parameter information to determine if proposed degradation is significant. If it is, it is significant with respect to all the proposed degradation, regardless of the magnitude for different parameters.

2. **Brandon Kernen** – The occasional need for emergency transfers by public water suppliers - There have been occasions in the past, where in order to maintain service from a public water supply, emergency water transfers have occurred. There is no provision for emergency water transfers, or for waivers of WQ Standards, in the rules. It was a conscious decision not to put them in because the federal Clean Water Act does not allow waivers to WQ Standards. That remains an outstanding issue. The governor has emergency powers and can override rules and regulations. We will leave that to be worked out as emergencies arise.

3. **Bill Schroeder** – We are adopting a Social and Economic Justification procedure from Pennsylvania and Bill requested that DES ask them if they were happy with how it is working. We were told that, in general, they are happy with it. They are beginning to hear quite a few cases so it is important to have specific rules, which are working fine for them. They sent us a copy of their Social & Economic Justification paperwork, which had lots of detail. The way that it works is that it is submitted by the applicant and is then reviewed by their WQ Standards people. One thing that is in their report that isn't in our rules is the development of tax revenues. That may fall within some of the other headings of social and economic justification. One of the things that came out of Phil Trowbridge's review was the ambiguity of baseline loadings. There was a situation that was a brownfields development that had lakeside cabins with failing septic systems that were unoccupied. The proposal was to redevelop and replace them with new houses tied to an offsite sewer wastewater treatment plant. Is your baseline loading the cabins occupied with failing septic system or is it zero because they are unoccupied? It is an issue that Phil Trowbridge wanted to raise with this group. You didn't have clear resolution and one of the comments was on this. The developer said that they could just occupy the houses without a permit and change the base line to occupied houses with septic systems. No one really wanted that so they went ahead with the approval. We had some discussion amongst ourselves and I was curious to see what you all thought what you would consider to be baseline loading in that circumstance.

Ellen Weitzler– Something that has come up with other states that you might want to consider what is the baseline concentration of a parameter in the receiving water. In general, when you look at baseline loadings, even for point sources, it is important to consider the maximum permitted loading, not just what is in the receiving water. A lot of wastewater treatment plants may be permitted for flows they aren't actually discharging but if you only consider ambient concentrations you are potentially allowing more degradation than you intended because the treatment plant can then increase their loading without any additional antidegradation review. It isn't easy to do that because you have to consider a point in the river the upstream sources that are discharging up to their permitted potential. What do you consider when you are looking at the receiving water.

Phil Trowbridge – I think it would fall under the same framework. If you are saying the maximum permitted, meaning permitted right now, you could just rent those houses with the failing systems and that would be your baseline.

Phil Trowbridge – We did contact Pennsylvania and there is no red light. Adopting their standards is a huge improvement.

Bill Schroeder – There is nothing they identified that needs to change?

Phil Trowbridge - It is hard to put a dollar factor on everything but their process sets up a good framework where all factors are considered and I don't think there is any way to remove ambiguity.

Michelle Daley – It seems like it would need to be a case by case basis.

Phil Trowbridge – The most compelling argument is that an area is growing and you can either take up virgin shoreline and or you can redevelop an area.

Allan Palmer – Can you walk through the process? You are looking at the baseline versus going to a municipal wastewater treatment plant? You have to look at the loading from all those discharges from houses after treatment at the WWTF.

Phil Trowbridge – That is what they did and they showed it was a significant improvement over past systems.

Allan Palmer - Unless it is zero, there is going to be an increase in loading.

Phil Trowbridge – That is why they went through the social and economic justification. If you have these occupied houses and all the septic systems are bypassing and going to the lake, by diverting that flow to a treatment plant where it is treated then the discharge is an improvement in loadings to the lake. Under antidegradation that would be fine and you wouldn't need a social and economic justification because it is an improvement. If your baseline is zero because it hasn't been occupied then there is some incremental increase, which is why they went through all those justifications for doing it.

Allan Palmer – The other thing you could do is make an assumption that every house has a state of the art treatment unit and the loading from that.

Phil Trowbridge – They have to do an alternative assessment, just like us. We have adopted their rules. They spent a lot of time showing that the soils were not suitable for onsite septic systems, which is why they failed in the first place. If they bought adjoining parcels, could they use those for onsite septic systems? They went through a lot of alternatives to show that there was no other alternative besides a pipe to the treatment plant. I thought that it was good that you have to go through a bunch of alternatives to show that there really are no other alternatives and the benefit of doing it. That is the part that is somewhat subjective but at least you have identified all the alternatives.

Allan Palmer – You couldn't say you could look at discharges from the failed systems because those would probably be illegal systems. It doesn't seem that you could take that approach. Occupying the house isn't saying we are going to discharge. If it is an illegal discharge then I think that the Board of Health wouldn't allow occupancy. This is something that you could get into with all the cabins in NH. There are a lot of failed systems in Goffstown, where I live, and they are trying to get them hooked into Manchester.

Phil Trowbridge – I think that is consistent with how that thing played out. There was an incremental increase in discharge from baseline and that is why they were required to do the social and economic justification.

Allan Palmer – From the EPA's perspective, when you are looking at baseline, if a facility has been discharging 9 MGD historically but they are permitted for 10 MGD, when you are looking at establishing baseline, are you are looking at that permitted number?

Ellen Weitzler – Yes, you have to consider the pollutant loading and then the flow.

Paul Currier – That is consistent with the way we have done antidegradation for point sources in the past. The permitted load is the baseline.

Jeff Andrews – We look at the existing load and we measure their baseline and then take a snapshot and four rounds of samples upstream. Then we do some spreadsheet calculations for coming up with how the downstream concentration to the treatment plant will change compared to the upstream quality to determine assimilative capacity and look at the existing load and at 7Q10 and the design flow in combination with that and look at the whole picture as it exists as well as the design flow.

Paul Currier – We don't try to model upstream water quality that would exist if all the upstream discharges were discharging at their permitted loads.

Jeff Andrews – After we do our spreadsheet counts we do add the load of the nearby upstream treatment plants, we are starting to do that because we don't know in a lot of cases what all the pollutants will be in the future. We do the best we can to predict the future load and add that.

Paul Currier – It occurs to me that for nonpoint sources, the same issue exists, where you may have approved landscape change development projects in the watershed with a build-out of a decade or more and they are sitting there with all the approvals in hand with no effect on water quality. These are all things for whoever is reviewing the antidegradation to consider.

Bill Schroeder – In 1708.10(a)(2), on page 3, in the middle of the page, the proposed project or activity will provide an important economic or social development in the area considered. What would be the geographic scale that we would look at? Are you looking at social and economic benefit to the immediate vicinity, to that specific waterbody, or can it be a regional benefit? I hadn't thought of that until Bill raised the question and I thought that it would be good to discuss as a group and whether there is a distinction that needs to be made. Wasn't there some language that referred to all of the adjacent communities that were adjacent to the community where the waterbody was located?

Paul Currier – Yes, that is the way that Pennsylvania does that and we took that from them.

Phil Trowbridge – It says that on page 4.

William Schroeder – (d) *“For purposes of evaluating whether the project shall provide an important social and economic development, the area where the waterbody is located shall include the municipality or municipalities in which the waterbody is located and all municipalities that abut those municipalities”*. That seems to define the scope.

Phil Trowbridge – That defines a geographic area. That is better than saying that you are going to sacrifice one little area for tourism in the state, or something like that. It is a little bit more focused.

Ellen Weitzler – It also gives you the flexibility to expand because it says that it should include that.

Phil Trowbridge – If everyone is ok with the language then we don't need to change it. I just wanted to raise the question because I thought that it was a good point.

Allan Palmer – Should we be a little more specific on (d)? Do we want to say, “shall include at a minimum” because someone could say, “shall include these and only these”?

Paul Currier - That is probably the way that we would interpret it because the applicant would have limited the area to do the analysis that we are going to do.

Phil Trowbridge – Do you want me to keep it the way it is?

Paul Currier – I think we would like to keep it the way it is but it is a valid criticism that is somewhat restrictive in the view of the review. You could not consider state-wide benefits and would have to limit the benefits to the community and abutting communities.

Allan Palmer – Isn't that severely handicapping the person who is trying to show that there is an economic benefit if you are limiting it to that small of an area?

Paul Currier – We are somewhat limited by the fact that the federal language says “the area in which the proposed project is located”. The federal language requires us to restrict the analysis but they don't define it any more than that.

Michelle Daley– The way this is worded you can include areas beyond the abutting communities. *“It shall include but it doesn't say limited to.”*

Paul Currier – That is true.

Phil Trowbridge – You can say, *“shall include but not limited to”*

Ellen Weitzler – But you want it to be limited so maybe you should say, “shall include only”.

Paul Currier – Or, if we leave it the way it is, if it was a benefit for the applicant to expand the area they could request it and we would not be violating the rules if we allowed it.

Michelle Daley– You may run into situations where it will benefit that community and the neighboring communities but also other ways.

Paul Currier – Maybe it is ok as is, given that the applicant can suggest it. As far as degradation, the environmental downside, I think that would generally be limited to the area in which the project is located and the downstream waterbodies.

Bill Schroeder – It seems to me that this is useful as it is. As you point out, for the developer it is advantageous to take a bigger area if they can. If there was something about this that the state thought that needed to include a bigger area for the project then they could do that but it gives a starting point that is reasonable.

Phil Trowbridge – Is everyone ok with it as it is?

Phil Bilodeau – I have a question on page 5, 1708.12(a). Why did we add number (4), *“A water conservation plan that meets the water conservation requirements”*? Is that a rule by itself in another location, so it is redundant?

Phil Trowbridge – We added it in response to a comment from Brandon Kernen at the last meeting just to make sure that the applicant knows about that rule and that the water conservation measures are being implemented prior to approving new water transfers.

Phil Bilodeau – So it is redundant.

Phil Trowbridge – It is redundant in that it is mentioning another rule but it is making it specific to this approval process under 1708.12.

Paul Currier – The applicant may not have an approved conservation plan before they propose a transfer.

Mike Metcalf – I don't know what is considered significant under Item (3), *“The withdrawal from source water, shall be considered significant for the purpose of antidegradation review”*. What does significant mean?

Paul Currier – It means that there has to be the full social and economic justification and public participation and closes the 20% window for insignificance. Those words are a big deal as far as intensity and review process.

Mike Metcalf – I don't have the RSA in front of me but what about the last thing, “if all the conditions are met it shall not constitute a discharge”? Phil pointed out that had to do with an opinion by the Attorney General.

Paul Currier – Yes, exactly and it gets around the lack of clarity in the statute about what is sewage or waste. The Attorney General's opinion was that the statute specifies that the discharge of sewage or waste as being prohibited in Class A waters and we don't really want to prohibit all the things that

might be considered discharges of sewage or waste in Class A waters because that would shut down all human activity in Class A watersheds. If we declared them not to be discharges then we don't have to worry about whether they are sewage or waste. Only a lawyer would think up that solution, but it works.

Allan Palmer – Could you go over the two other changes on page 3, “shall not approve the discharge or other activity...”.

Phil Trowbridge – That was purely semantic. In the first part of that paragraph in the second line it says “increased discharge or other activity.” We were just trying to mirror the same language.

Paul Currier – There are other activities that don't constitute a discharge that would result in degradation. Hydrologic modification is an example.

Phil Trowbridge – That was more of a grammatical thing. The other was the bottom of page 4. I am trying to emphasize “if and only if all these conditions had been met”. It doesn't change the meaning.

Allan Palmer – I was more interested in the one above it.

Phil Trowbridge – The risk management plan? The point of this is that you are supposed to talk about the reliability of treatment technology, which should imply how well it will work. Some people may miss the idea that you would be looking at risk management strategies and what happens when it doesn't work.

Allan Palmer – What do you mean when you say non-standard situations?

Phil Trowbridge – It is a legal term for accidents. The bottom line is that we thought that anyone reading that would say that their treatment plant removes 99.9% of that and they would provide specifications on that but we would also want information on what happens when it fails or doesn't work properly.

Allan Palmer – Do you find that term somewhere else? I had no clue that meant upsets and accidents.

Phil Trowbridge – No, we don't. Is it better to just say accidents? Does anyone else have problems with that language?

Gregg Comstock – You could say for non-standard situations such as upsets and accidents.

Phil Trowbridge – That is fine. We now pride ourselves on being concise here.

Eileen Miller – I have a question about when we were discussing social and economic impact and the geographic area. You said that they don't have to consider downstream? I may have heard it wrong.

Paul Currier – I was mixing things up. The impact on all downstream waters is considered when you are talking about social and economic. I commented on something that isn't there.

Gregg Comstock – On 1703.8, benthic deposits, why did we strike “as naturally occurring”?

Paul Currier – You have caught a change that shouldn't have been struck because that is one where what we really want to strike is the first part, which prohibits benthic deposits unless they are natural. The reason is that we have no objective criteria for determining whether a benthic deposit is natural or not in order to determine if it would be a violation of Class A. For Class A and B, the way that we would make that decision is we would determine that there is a benthic deposit and that it has a detrimental impact on the benthic community and would be a violation of the WQ Standard. At that point, we would ask if there were any obvious or apparent anthropogenic causes of the benthic deposit. If the answer is no, then we would consider it naturally occurring and not to be a violation of the WQ Standards. That is a different nuance than saying there should be none unless they are naturally occurring.

Bill Schroeder – You are proposing, in 1703.8 on page 2, the last occurrence of the phrase “unless naturally occurring would be left in?”

Paul Currier – Yes, we would leave that in but the previous section, what was Item A, Class A will contain no benthic deposits remains the same.

Paul Currier – That remains.

John Magee – Some of the restoration work that folks are doing in Class A waters involves restoring instream wood. One of the things, in particular, that people are doing is retaining sediments. I can think of a lot of examples in some of these smaller and bigger streams where you have sediments that are not embedded at all, along straight riffles that offer a lot of habitat to benthic macroinvertebrates.

If you do something like put a tree or wood, or do something as part of a bona-fide restoration project with the intent to retain a lot of the finer sediments and nutrients. Now you have taken a un-imbedded stretch of riffle and made it a lower gradient and kept a lot of the fine sediments and all the benefits that activity provides but you could say that there are not as many stoneflies in that area so therefore it is a negative thing. There are positive things as well as changes for the benthic community in this specific area.

Paul Currier – I think that would work alright because if there is a restoration project there has been analysis of the aquatic community and a determination that the output would enhance the aquatic life. That would be a benthic deposit but it would not have a detrimental impact. I see what you are saying and I wonder if we should change that. Maybe we want the detrimental impact to be defined by the aquatic life in the stream rather than just the benthic community.

John Magee – That sounds reasonable.

Ellen Weitzler – Aquatic life includes the benthic, correct?

Paul Currier – Yes, if you were to take a benthic index where the stream bed is influenced by the wood placement you would get a lower number than a riffle.

Ellen Weitzler – I think that you are always pretty safe when you say existing or designated uses because that includes your aquatic life uses.

Paul Currier – We could replace the words benthic community with existing or designated uses.

William Schroeder – Are there any other questions or suggestions? If you have any questions you can e-mail Paul Currier or Phil Trowbridge at the DES Watershed Bureau.

We will present the changes at the December Water Council meeting and then will move on to rulemaking.

10:00 – 10:45 Discussion Paper Regarding Biological and Aquatic Community Integrity Assessments for Water Level Fluctuations in Impoundments Phil Trowbridge

I underestimated this topic. There have been a lot of discussions in-house and all the aspects that can affect instream flows, 401 WQ Certificates, etc. This is not fully formed guidance yet because we do not have fully formed ideas. What we are looking for from you is reaction and new ideas and things that are missing. I will go over the situation, some of the definitions and the basis of our approach and open it up for discussion. The reason we are doing this is we have standard biological and aquatic community integrity, which is 1703.19. It is written such that the standard by which we compare the biological communities in any waterbody is similar to the natural habitats of a region. An impoundment is not a natural habitat. We have put a dam there and we have changed the natural habitat to something that is artificial. How do you rectify an analysis of an impoundment for a biological and aquatic community when you don't really have a natural habitat? It is not fair to compare the impoundment to the stream that used to be there, which is now an impoundment. It is an entirely different thing. Legally, we have to come up with a process to justify keeping an impoundment because it has been built for some social need and rectify that with the WQ Standard. Under the definitions, section (a) is key, which is "surface waters shall support and maintain a balanced, integrated and adapted community of organisms having a species composition, diversity and functional organization comparable to that of similar natural habitats of a region". Another definition I will call your attention to is the biological condition matrix.

Paul Currier – That definition is words that were published by Jim Karr, who was a noted authority on aquatic life and invertebrate indices and occurs in the WQ Standards of a lot of states. States have adopted the Jim Karr definition broadly.

Phil Trowbridge – The BCG matrix is important and we want to include it in our approach. It was developed largely in the state of Maine by Susan Davies, working with EPA. It is a way to incorporate various sources of biological information to categorize a waterbody into one of six tiers, ranging from Tier 1, which is a natural or native condition down to Tier 6, which is severe change to the structure in the biotic community and major loss of ecosystem function. Each of these tiers has a basic description and the BCG framework also has more detailed breakouts for each of these tiers that

would describe, in narrative terms, conditions for historically sensitive species, sensitive or rare taxa, ubiquitous taxa, tolerant taxa, non-native taxa, organism conditions, ecosystem functions, spatial and temporal extent of detrimental effects, and ecosystem connection. The URL that was provided at the end of the table is for the report that has all of the information. The best way to describe this is a detailed narrative standard. It is not a numeric standard. If you asked what a natural or native system was there would be lots of boxes to fill in and ways to bring in data from fish, benthos, fringing wetlands, invasive species and a whole number of things, depending on what is relevant to your system.

Paul Currier – It fits well with biological metrics and indices of biological integrity. We have not developed a great deal of them but we have macroinvertebrate and fish indices for wadeable streams. Those have a numeric scale based on natural sample collection, from very good to very bad, you can relate that scale to each of these tiers so it is readily translatable, after you have developed a biological metric into a number.

Phil Bilodeau – How and where might this rule might apply?

Paul Currier – There are two examples that we have wrestled with and neither of which has been resolved. One was Wiswall Dam in Durham, which Mike Metcalf is very familiar with. The Wiswall impoundment has not been fluctuated since the mill went away. Durham wanted to and received permission in a 401 Certificate to fluctuate the impoundment by a minor amount. In order to maintain instream flow downstream of the dam while withdrawing water for Durham and UNH as public water supply, Durham asked to increase the level of fluctuation because they had revised their calculations about how much water they needed to supply their service area. There are fringing wetlands in the area that were created by the dam and wouldn't be there without the dam. What would be the impact on the wetlands of the proposed increased level of fluctuations and would that impact violate the narrative criteria for aquatic life? A second example is when the City of Portsmouth needed a 401 Certificate on the intake from the Bellamy reservoir - the same question was asked of them. The Bellamy Reservoir was built as a public water supply in the 1950's and has been operated as a public water supply ever since. We had the opportunity to review the WQ Standards for instream flow. The Corps of Engineers, which built the reservoir, has an instream flow requirement which is 1950's vintage and doesn't meet current guidelines. They are likely to get a new instream flow maintenance requirement at some point, when we figure what the numbers should be, that may result in impoundment fluctuations that are different and greater than what they have been doing historically. Would that violate aquatic life support for the fringing wetlands of the Bellamy Reservoir?

Phil Bilodeau – How does that apply when the federal government removes a dam?

Paul Currier – It wouldn't for the same reason WQ Standards don't apply when the federal government gives a 404 Permit to fill in a wetland. When you fill in a wetland it no longer exists as surface water. It is the same way when you take out a dam. The surface waters that were created by the installation of the dam cease to exist.

Phil Trowbridge – The general response to your question is that this only applies when we are doing WQ Certificates.

Paul Currier – One more example is Horace Lake in Weare. DES owns the dam. The lake is drawn down a substantial amount every fall. There is a really nice wetland complex on one of the tributaries to Horace Lake. That wetland complex is nice and is valued for its wetland attributes. It gets dewatered when the lake is drawn down. There was a grant funded project to create a supplemental impoundment upstream to keep the wetland wet when the lake is drawn down.

Bob Ball – To have an impoundment you must have a dam. The definition of a dam is that it should be 4' high and should go across a stream and have so many square feet of impoundment. There isn't much area that you need to have as an impoundment. It seems that this should also cover a lot of small dams on small streams, other than the large ones you are talking about. Am I correct?

Paul Currier – Yes, I don't know if we have defined impoundment but we ought to. The intent was that anything that humans put in the river that changes the water flow and area would apply.

Bob Ball – A four foot dam, in terms of fish passage, is going to automatically qualify and will put it in the gradient matrix as disturbing the stream. Not many fish are going to go over a four foot dam.

Paul Currier – You are absolutely right and that is something for which we don't have well developed criteria yet. Barriers to fish passage are potentially violations of the WQ Standard.

Bill Schroeder – What is an impoundment? Lake Winnepesaukee has an impoundment at the end of it. Is that an impoundment?

Paul Currier – Yes. Lake Winnepesaukee is operated.

Bill Schroeder – Waterbodies that are natural lakes but also have a dam at the end of it would also be considered an impoundment in this sense? This would hit a lot of water bodies.

Phil Trowbridge – Yes, if they are managed and if the water is fluctuated in some way by humans.

Paul Currier – It would apply in the 401 sense if there is a proposal to change the operation. This is coming up on the Lamprey Instream flow study where Pawtuckaway Lake is a substantial impoundment in the watershed. An option to maintaining the instream flows that we determine are necessary would be to use Pawtuckaway Lake water to provide for instream flows to use during low flow conditions. The Pawtuckaway Lake dam, for most of its history and up until the mid-fifties, was used for water power and to augment levels in summer. The lake was drained so the stream could be maintained to use downstream for water power. That stopped in the mid-fifties and DES acquired ownership of the dam and the water level fluctuations that had been going on historically were stopped. It was converted to just recreational use and the pool was filled in the spring to optimal levels for recreation and then it was drained every fall to what was considered a good level. Now, as we are developing a water management plan for the Lamprey River, the proposal is to change that so that the goal is no longer to maintain full pool all summer. How will that affect the aquatic life around the edges of the lake now that we are planning to fluctuate the water level?

Phil Trowbridge – I would like to go through the proposal and then come back to this discussion. There were some key points that came out of this discussion. The proposal only relates to this biological and aquatic community integrity standard and has nothing to do with dissolved oxygen or turbidity or anything else. Those would all be evaluated separately as part of a 401 WQ Certificate. Likewise, any existing designated uses cannot be eliminated as a result of this proposal except in the case of a dam removal, which is one of the things we already discussed. You are restoring to a natural state so using the existing impounded area is ok. In terms of the applicability, some kind of proposed change in the impoundment operation from historic practices would trigger a 401 WQ Certificate review. The idea of increased fluctuations from historical practice would have to be reviewed under antidegradation. Paul mentioned Pawtuckaway Lake and instream flow protection. We put in here specifically that if you have an approved water management plan under the 1900 Regulation, that those fluctuations would have already been vetted through a public process for the downstream benefits so those fluctuations would be approved. You would have gone through a review with the stakeholder process and tradeoff analysis to determine if it is appropriate.

Allan Palmer – Can you explain the trade-off? You can't go worse than Tier 4.

Phil Trowbridge – Those conditions set up the framework where we would do this. There are all these situations where you have to determine whether the fluctuation will affect the biological community. We decided to use the BCG approach, which says that when you need to do antidegradation for some parameter, like DO or chloride, that you have some way of measuring your remaining assimilative capacity. For the biological and aquatic community you have no way of measuring that because it is not a pollutant that can be distributed. We thought that a way to approach that was to say that you needed to maintain your existing tier that you are in with the BCG approach. If you are an impoundment that has been fluctuating, and according to the BCG analysis it is Tier 3, and you want to increase your fluctuations by another foot or so and through the evaluation you determine that you would still be Tier 3, then there is no change in the biological community and no need for an antidegradation analysis. We felt that there needed to be a basement on this and even if you had a historical practice that was taking an impoundment and draining it to zero and fluctuating it up and down every two days, we couldn't consider that to be in compliance with standards. We thought that setting Tier 5 and Tier 6 and saying that these were impacts to the biological community that would be unacceptable and if they were to be needed, or existing as historical practice, then you would need to do a use attainability analysis. As far as your question about the instream flow, we wanted to provide the same basement for the instream flow as we did for the other analysis. Reasonable historic practices would be considered to be acceptable and deviations from those that don't change the tier of the impoundment would be acceptable. When you have an unreasonable historical practice, or a change from the historical practice that is going to degrade and lower you

down tiers then you would have to go through a social and economic justification or a use attainability analysis for that impoundment. To give us some concept of what is happening in other states, I spoke to Vermont and Maine. They generally look at how much of the littoral area of the impoundment is dewatered as a result of the fluctuation, so depending on the photic zone or how clear the water is, you have a certain area that is littoral and Maine limits draw-downs to only 25% of the littoral zone, which is 3-5 feet, depending on the morphology of the lake. In Vermont they look at the same thing and it is generally about two feet of fluctuations. Changes to the littoral zone, or dewatering the littoral, would easily be evaluated as part of the BCG tiers.

Ellen Weitzler – If you have a water body that is currently Tier 2 and changes and the result would make it a Tier 3, a review would be required?

Phil Trowbridge – Yes, that would require a review for social and economic justification. But if the changes you are making, through whatever algorithm that you are using according to the BCG, are still Tier 2 then we would accept that change in the WQ Certificate.

Ellen Weitzler – I am not a biologist that does those assessments but is it possible that you would be changing it for part of the year so it would be Tier 2 part of the year, or Tier 3, or would you be looking at the waterbody as a whole over the year?

Phil Trowbridge – I think that we would be looking at the whole year because you would be looking at all life stages. If you impacted it during an important life stage it might drop you down but if you impacted it during a period when it didn't really matter, then the BCG tier would not change.

Paul Currier - Ragged Mountain has a proposal to expand the resort area in Danbury and they wanted to use an impoundment, which is owned by Fish & Game and is a substantial wetland, for snowmaking and fluctuate the impoundment during the winter. The criteria were the ability of organisms that depend on the mud and water cover for their winter survival not to be impacted. That is specific to the fall/winter time regime.

Phil Trowbridge – At this point it would be good to get feedback on the direction of approach and your understanding of our need to do this. We can then work our way down to specifics.

Allan Palmer - I thought this was entirely for the 305 (b)/303 (d) assessments but now I am hearing that it may be more of a 401 certification issue.

Phil Trowbridge – If we adopted it we would probably use the same method analysis for 305 (b) and 303 (d).

Allan Palmer – I am wondering if it is better to clarify it. I read it as it being a water quality assessment as opposed to a 401 certification. I am wondering if the intent could be better stated.

Paul Currier – They are the same thing with a different emphasis. Doing a 401 certification is water body assessments and then doing a future projection of what the water quality assessment will be. This is intended to be used primarily for 401 certification situations where there is a proposed change in operation of an impoundment and we have to figure out if it is ok from a water quality standards point of view.

William Schroeder – You are asking for comments. Do you want them now or do you want them e-mailed?

Phil Trowbridge – Discussion now or e-mail is fine. Since this is preliminary, I think it would be helpful to hear other people's opinions.

Brandon Kernen – Would this also apply if there was a complaint about water level fluctuations? I just wanted a sense of how likely a Tier 5 is likely to occur because we have examples of that now. Are those common? I want a sense of how sensitive these triggers are.

Paul Currier – Yes.

Dave Neils – The BCG framework is narrative and where it has been utilized a group of biologists have to come up with a rationale to place waterbodies in a particular tier. Based on the rationale that they used you can set up some rulemaking to determine what tier a waterbody is placed in. That is based on biology and how sensitive the triggers are is based on the rules. The idea of the BCG tier is that it is a way to communicate across state and political boundaries and it is based purely on biology rather than looking at water quality criteria. We don't have a BCG tier rating system yet but the framework is well in process.

Phil Trowbridge – It might help to read the narrative definitions for Tier 5.

Dave Neils – Where the BCG tiers stuff has been used, typically thresholds for attainment or non-attainment fall within Tier 4 of the BCG. That does hold true for what we know about benthic macroinvertebrates and Wadeable streams.

Phil Trowbridge – Just to give this a context of what Tier 5 would be; Tier 5 is major changes in the structure of the biotic community and moderate changes in the ecosystem function. “Sensitive taxa are markedly diminished, conspicuously unbalanced distribution of major groups from that expected, organism conditions show signs of physiological stress, system function shows reduced complexity and redundancy, increase buildup or export of unused materials, historically documented sensitive endemic taxa are absent, sensitive or rare taxa are absent, sensitive ubiquitous taxa are frequently absent or markedly diminished, taxa of intermediate tolerance often exhibit excessive dominance, tolerant taxa often occur in high densities and may be dominant, some assemblages are dominated by non-native species, organism condition, biomass may be reduced, anomalies increasingly common, loss of ecosystem function manifested as increased export and decreased import of some resources and changes in energy exchange rates, spatial and temporal extent of detrimental effects, detrimental effects extend far beyond the reach scale leaving only a few islands of adequate conditions, effects extend across multiple seasons, systematic loss of ecosystem connectedness is evident, re-colonization resources do not exist for some taxa.”

Brandon Kernen – I am trying to get a sense from some one with expertise how often a recreational or water supply impoundment fall in Tier 5 right now? I know we haven’t done that assessment and we don’t have the criteria.

Paul Currier – I think not very often. Lots of recreational impoundments go up in spring and come down in the fall. My general sense is that we don’t have lots of WQ Standards that relate to fluctuations right now.

Mike Metcalf – Would the Horace Lake example get into Tier 5?

Paul Currier – Yes, I would think so. That is one where is the Weare Conservation Commission came to us and said that the wetland wasn’t doing well. It was a nice wetland that was created by the impoundment and the way that Horace Lake is being operated right now it needs some remediation. We gave it 319 money so it had to be defined as having impairments in order to get money.

William Schroeder – If you have an aquatic community that is impacted and you are trying to figure out what tier it is in, do you only consider only the effects of the raising and lowering of the impoundments? Because in developed watersheds you may have lots of other things that are affecting the community as well, such as development. You have to ask if the water problem is caused by water fluctuations only or is it also caused by another problem.

Unknown (Male) – Relative to taxa and BCG, when you are looking at sensitive taxa because of the water level fluctuations, it may not be water level fluctuations but that the habitat is just not there to support these sensitive taxa in the first place. How do you decipher the effects of water level fluctuations when you are looking at the disappearance of sensitive taxa? Is the habitat really there to support these clean water sensitive taxa?

Phil Trowbridge – Right, if the impoundment was just held level at whatever.

Paul Currier – The Strategic Plan that we have is to develop biological metrics, IBIs, for all water body types and to use the appropriate assemblages to develop those. In concept, with wetlands as a focus, we will be developing wetland metrics.

Unknown (Male) – Which will be reference metrics? Will those metrics incorporate some sort of habitat score metric within these metrics? Even though you have metrics for a reference wetland or stream and you are looking at another stream that has similar watershed characteristics, you have to consider if the reference type habitat is there that would support that stream and mimic that reference. It may not be a fact of water level fluctuations or pollutants but a natural effect that the organisms cannot be sustained there because of what they need for condition.

Phil Trowbridge – You’re saying that it is not appropriate to say that it is Tier 5 because we don’t have any sensitive species because they may not be able to exist there.

Unknown (Male) – Not necessarily, it could be true but it may not be true because it may not be supportive. Dave may disagree or have other things to add to that but I don’t think that you can say that just because the sensitive taxa are not there that it is Tier 5.

Paul Currier – That would shake out in the development of metrics. You are doing taxa counts on organisms and you create enough sub-classes that you can assess that fact. That is in theory and I don't actually have any idea if we could do it.

William Schroeder – This is a good discussion but I am getting concerned about the effect on Ken and Ted and they are talking about the methodologies for the 305 (b)/303 (d) assessments. Do we need to stop this now and go to the next agenda item?

Phil Trowbridge – If there are any burning issues, bring them up now, otherwise e-mail them to me.

Paul Currier – This issue will not be resolved now. We are looking to develop this over time until we have a fairly robust guidance document.

Phil Trowbridge – We have this on the January agenda for a revisit. This is more of an introduction but I can only revise it as much as people raise issues.

Gregg Comstock – I wonder if everybody understands the use attainability analysis and how it fits into it here.

Paul Currier – A Use Attainability Analysis involves a very similar analysis to an antidegradation review but either a use is being removed or the criteria for use support are being significantly relaxed. In this case it would be primarily the latter where it would be an analysis that would be done that would justify the relaxing of the criteria so that an impoundment fluctuation regime could result in a Tier 5 or Tier 6 value for aquatic life.

Allan Palmer – You had mentioned social & economic justification before and I can't see where that is tied in here? Does it come in through the UAA?

Phil Trowbridge – It comes through the antidegradation requirement.

Allan Palmer – Where is that in here?

Paul Currier – It is the significance statement. If the proposed change in operation will result in moving from a higher tier to a lower tier, it would be a significant degradation under antidegradation.

Allan Palmer – Is that in here?

Phil Trowbridge – It is under number six, the antidegradation analysis. I could make that more explicit.

Ellen Weitzler – I have an item that could be discussed at the next meeting. It seems that DES is operating a lot of these dams so you would be applying this to yourself and maybe you could explain how that will work.

Dan Blais – In the privately held dams, on these brooks and streams that are high hazard dams. If the property is being redeveloped and the owner doesn't want to own a high hazard dam and opts to remove that, would this apply? I see number 2, existing uses, except in the case of a dam removal. We talked about the Feds removing a dam but how about a private owner that wants to remove a dam?

Paul Currier – It still would not apply. A dam removal is kind of generic, no matter who does it. It also applies to lowering the crest of a dam, for example. We might still have a structure there but it would have different water levels.

Allan Palmer – I am assuming that the existing 401 WQ Certificate and FERC analysis and all the stuff that a dam owner goes into. There is a gap existing now that you don't get into these things if you are doing a 401 recertification.

Phil Trowbridge – We do but we don't really have a way of doing it. We are doing some FERCs right now where we are trying to figure out how much instream flow is protected and how much fluctuation should be allowed when they are applying for a renewal of their license. How are we going to determine that the biological and aquatic community is reasonably consistent with a similar natural habitat? The reason for the whole thing is that we have to certify that this license is not going to violate our WQ Standards, which doesn't even apply to an impoundment. What we are trying to do is provide ourselves with a process whereby we can more credibly do those analyses.

Allan Palmer – Right now you are just glossing it over and not looking at biological indicators to any great extent.

Phil Trowbridge – We have the Instream Flow Guidance, which is a whole different thing, but in the impoundments we look at the littoral zone and how much of that is being dewatered. It is kind of a case by case basis. We don't have a formal process. I think it would be a lot easier for us and the regulated community if we had a process and that people knew what was coming.

Paul Currier – It hasn't been examined in the past when the Connecticut River 15 Mile Falls Project was re-licensed and the issue never came up. More reservoir area absorbs more of the spring runoff and releases it during the rest of the year.

Mike Metcalf – I have a question regarding applicability. You mentioned Wiswall and Bellamy as examples of where this came up. If another municipality had a dam on a water supply, which they were operating regularly and there was no change. Would this come up?

Paul Currier – No, it would only come up if there was a reason to do a 401 review and they are proposing something that needs a federal license or permit or withdrawal under the new state law. It also could come up in a complaint.

Phil Trowbridge – If you are going to send me comments I would appreciate them by two weeks so we have time to come up with something more fully formed by January.

William Schroeder – Phil's e-mail address is on the agenda about two-thirds of the way down.

10:45 – 11:15 Methodologies for the 2010 305b/303d Assessments: High Quality Waters Assessments and Wetland Water Quality Assessments Ken Edwardson

Ken gave a short PowerPoint presentation

The 305(b)/303(d) report is required every two years and covers all the surface waters of the state in the context of designated uses. The 303(d) is a sub-list of those waters that require a total maximum daily load setting. On the schedule a couple of blocks are grayed out indicating completion. We have received two comments. A request for data went out and we have a couple of new data sets to evaluate. Hopefully, by next week, we will have finalized our 24K assessment units. The previous assessments were done at 100K mapping so we are going to add 8,000 miles of river to process and a whole lot of smaller sized impoundments and lakes to begin the assessment process. The draft should come out in early February so we can receive comments in time for the April first deadline. In the context of standards, what has changed? The first group is things that make us more in sync with the water quality standards. This group has heard about the trophic class based chl-a and TP criteria that are now in the database. In the previous assessment cycles we used color as a surrogate for naturally low pH in lakes. Looking at it in more detail, that isn't really a good relationship and it is going to go away. That cascades into aluminum. Previously, we would say that if you have naturally low pH and there is aluminum in the waterbody, the aluminum is natural. Previously for Class A lakes, we interpreted the DO to be epilimnion, or top 25%, which is what the WQ Standards specify for Class B. The way it is written it does not apply to Class A lakes. In Class A lakes, DO will be evaluated at all depths except for the absolute bottom. We are going to apply the instream flow general standard on the designated rivers to flag them as potentially attaining or not attaining standards, based on how that fits against the general criteria. We are going to use the drinking water maximum contaminant limits and the ambient groundwater standards. It is sort of a screening on drinking water after potential treatment to make it potentially attaining or not attaining standards. The water and fish consumption standards are going to be applied to the fish consumption criteria.

Allan Palmer – What did you use for drinking water before?

Ken Edwardson – The standards says drinking water after adequate treatment. Since you can treat for anything it is all ok. This is intended to be a screening layer. As with anything, it is a lot easier to have the waterbody healthy before you have to treat it. Hopefully, the drinking water folks will be able to look at what comes out of this to identify future problems.

Paul Currier – If it is tagged as potentially not attaining WQ Standards, that doesn't count as an impairment on the 305(b) Report. It is just a screening level.

Mike Metcalf – It is not impaired if doesn't meet an MCL or point 3 iron level.

Ken Edwardson – It is the same thing with water/fish consumption. The fish consumption criteria are based on twenty or thirty years of continuous consumption and we have a couple of grab samples. It is a flag. The folks who do risk assessment may be able to identify a couple of areas that they should investigate. The wetlands assessment units are being rebuilt for this next assessment cycle. You may have heard of the NH Method for the evaluation of non-tidal freshwater wetlands. They

have their own system for aggregating wetland bits into complexes. We are going to adopt that protocol to make our new wetland assessment units. We are going to use the same level 1 assessments that Ted got running the last cycle that looks at the buffers around every wetlands assessment unit and its land cover condition.

John Magee – What if I need to find wetlands?

Ken Edwardson – We are building a NH Wetlands Catalog and the base is NWI.

John Magee – Does that include streams, rivers, ponds and lakes or is it wetlands?

Paul Currier – If it is not a covered in deepwater habitat, it is a wetland. Covered in deepwater is the presence of vegetation or two meters and vegetation trumps depth. If you have vegetation information, that is what you use.

Ken Edwardson – Open waters will remain as rivers and streams, as you have seen them in the past.

William Schroeder – Is this only for wetlands that don't already have an assessment unit and existing assessment units for rivers and streams will stay as they are?

Ken Edwardson – Yes, if you pulled up NWI for Lake Winnepesaukee, there is a NWI polygon for it. We filtered those out and treated them as we see them in the existing assessment units. It won't change and this is everything in the area around it.

Paul Currier – If you are familiar with what we did in the last assessment cycle, we developed an algorithm for aggregation and assessment, which we are going to put aside and use the NH Method algorithm. It is consensus-based and we having been working with them and Fish & Game to get something that multiple programs find useful.

Ken Edwardson – The way that the level 1 assessment was made was sort of a tale of two wetlands. If we have something that has a lot of urban area around it we make the assumption in this level 1 process that the condition of the wetlands is driven by its surroundings. You have a lot of urban area and run-off and if stormwater gets in there you degrade water quality and fish and bugs are less happy. On your right you have forest and that is natural runoff and conditions. To be more technical you apply the land use/land cover data set and figure out the fraction of every land use/cover set in there. Each one of those has a score so if you have a highly developed blob in your buffer zone that has a higher impact. The highly developed one on the left, 80% came in as developed in that buffer zone. The low developed site was all forest. You weigh each of the land cover bits by the fraction that is covered in your buffer and you come up with a score of 53 in the level 1 assessment. Anything over a 10 was potentially not supporting. For the one that looked good, oddly enough, you came up with 0.5 so you say it is potentially attaining standards. We developed a process to do this to the whole state in one fell swoop. I know the Wetlands Bureau has already rolled this into their process for spending ARRA funds. For antidegradation tiers we are going to make estimates on the black line thresholds. The WQ Standard is pretty straight forward and it is in the regulations. It only gets squirrely when you have to factor in conductivity, elevation, pH and all of that stuff. If those two are easy then the threshold between Tier 1 and Tier 2 is also easy to calculate. When you get to the existing water quality, which I think today's beginning discussion highlighted, it is not an easy number to come upon and you need to factor in critical seasons and period and we need to know minimum data. If you want to know absolutely what the existing water quality is you need to factor in all the existing point source and non-point source discharges at their permitted loads. We are going to make probable evaluations based on all the data that we have. This is the brute force approach and we are going to apply it for this round to DO concentration, DO saturation, the new aquatic life criteria for chlorophyll and TP, for primary contact for ambient chlorophyll and bacteria, estuary nitrogen and all the toxics in the standards. If we have time we will apply it to ammonia and try to apply it biological metrics. From the BCG discussion we had here, it is hard to figure out how much additional loading you can hit a biological metric to push it under the standards. We may possibly look at clarity. If anyone has looked at the Watershed Report Cards, which gives you waterbody by waterbody, designated use by designated use, and parameter by parameter, how everything is assessed. You will now see a new antidegradation tier code. If it is impaired it is impaired and if it is within that Tier 1 zone, we are going to potentially tag it with Tier 1, which we believe based on available data that there is no remaining assimilative capacity. If, based on the available data, it looks like there is assimilative capacity, it will show up as PHQW (Potential High Quality Water) Tier 2. ORW, regardless of how existing water quality is, is still an ORW and will show up. There will be a

whole bunch of nulls where we don't have the available data and we are providing places for absolute values. That will be determined on further review of the data to make sure that you have the critical conditions as well as factoring in all the point source and non-point source loads. That is where we are heading with the assessments in the next three months.

William Schroeder – What is the last link and what information can be found there?

Ken Edwardson – That is the base of the surface water quality assessment website and it links to everything. If you want to get to the 2008 list or the report cards, there is a link there.

William Schroeder – What about this slide show presentation that you have just given.

Ken Edwardson – It is not there. Do you think it would be a good thing to put it there?

William Schroeder – Could you put it there? I thought it was a good presentation but I couldn't go as fast as you are going.

Ken Edwardson – I think we can do that. (Please note that the meeting materials and presentations were uploaded to the WQSAC webpage

<http://des.nh.gov/organization/divisions/water/wmb/wqs/meetings/index.htm>.)

Bob Ball – This is a model and you are doing the whole state so obviously you cannot go out and verify. How do you go out and validate a model. My problem is in the past I have looked at a report card and then walked the stream and I can't believe the report exemplifies what I am seeing. Is there a way to validate the model and make sure that all the data is correct?

Ken Edwardson – Everything that goes into the process has been through the EMD and it all has to be QA/QC validated data. You make the assumption on the way in there that if there is a DO value in there that is 4.5 mg/L, the DO when they sampled it really was 4.5 mg/L. With that said, we don't make any assessments based on a single value to account for errors in measurement.

Phil Trowbridge – The thinking is that all models are wrong and some are useful. In order to do the thousands of assessments that Ken does, it has to be automated. We rely on people that feel that their data is correct and that more data should be correct submitting that to us so we get that into the database and the assessment changes. The assessment isn't a totally objective, turn the crank kind of thing. We aren't going out to visit these sites to verify that the number is correct. If you see other data you should get it to us and we can incorporate it. That is the only way to correct it.

Ken Edwardson – There is one thing that we are doing different in this cycle. In the last assessment cycle, the database, on a sample level, made a million standard comparisons. There is no way that I could look at a million comparisons without going completely mad. One of the things that we are doing for this cycle is a lot of that upfront so we can look at where condition has changed. If the water is going from full support to nonsupport we can actually sit down and look at that group of 100 samples and evaluate them more strictly to see if there are outliers in there. Is it your impression that it usually shows them to be better or worse than they are?

Bob Ball – In the cases that I have looked at it was worse. I'm sure that you can't have enough data for the whole state to have enough for every stream. There must be some guesses along the way?

Ken Edwardson – There are a lot that are not assessed. We made a million standard comparisons but if you stick a data logger out there and you calculate daily averages on something you can quickly end up with single water body with 6,000 or 7,000 records and another waterbody next to it that doesn't have any. It is a lot easier to say that something doesn't meet standards than something does meet standards. A lot of the standards are instantaneous things like DO, which shall never fall below 5 mg/L.

Bob Ball – This is an important thing because if you take this to your selectmen and show it to them, they want to believe. You want to use it when you want to try to convince someone to change something but the data has to be credible. When it says that it is bad, it has to be bad.

Paul Currier – We can pull the data that we used for the assessments for every assessment we make. There is very little extrapolation of data in our assessments. The assessments that we make follow the CALM, which is very thick, and you wouldn't want to read it all, but you get the data that applies to each assessment if you want it and Ken Edwardson can give it to you.

Ken Edwardson – As we move forward the hope is that you can get that all live on the web so when you see a unit has a problem you can get the data. You may have to wait a few minutes for it.

Bill Schroeder – At the last meeting John Hodsdon asked if cyanobacteria had any impact on the standards. Did you look into it?

Phil Trowbridge – We did and we ultimately thought that the existing WQ Standards are sufficient for now to evaluate and regulate cyanobacteria. We have WQ Standards related to surface scums, dominant and nuisance species, and Env. 1703.12, related to surface floating solids. We also have quantitative measurements that we use at our beaches, which we use to make assessments for swimming use at beaches that will apply to the rest of the lake.

Paul Currier – That is important and something that I didn't realize. If a sample is taken at a beach and it fails the quantitative measure and it is a microscopic analysis, the assessment is applied to whole lake and not just the beach.

Phil Trowbridge – Cyanobacteria is definitely a problem but we don't feel that there is a WQ Standards gap that is needed to be filled by this group. We did not add it as a topic for the rest of year.

Bill Schroeder – If anyone, such as John, has a concern about cyanobacteria and wants to know a little more about it is there someone he can contact for more information?

Bob Estabrook – The DES website has a lot of information about cyanobacteria under the Beach Program.

Allan Palmer – Jim Haney at UNH has a lot of information.

Unknown (Male) - NEIWPC is having a workshop in January on cyanobacteria. I think Jim Haney might be speaking there.

Next Meeting

The next meeting date is Wednesday, January 27, 2009, 1:30 -3:30 p.m.

The meeting topics are: Water Level Fluctuations, Designated Uses into the WQ Standards and Geomorphic Integrity

Paul Currier - We should avoid information overload and should keep the topics limited to keep the attention of the Committee focused on a small number of topics at one time.

Bill Schroeder – We appreciate getting these documents ahead of time to review them and think about them. It would also be helpful if you tell us what you would like us to pay particular attention to or what you would like our input on.

- **Ellen Weitzler** motioned to adjourn and **William Schroeder** seconded. All were in favor.

Adjourned at 3:00